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The Relationship Between the Valence and Arousal of Emotions and the Decision-Making on Donations

The present study aimed to examine the relationship between emotional state and prosocial behavior. An experiment investigated the influence of picture valence and arousal on donation size. Based on self-reported emotions and physiological reactions' data of 54 participants, we showed that valence and arousal are related to donation size. According to the received data, the participants donated more when they experienced negative and strong emotions. The results also showed that the ill health of pets is a crucial characteristic for collecting donations in a context of homeless dogs.

Keywords: donations, emotions, valence, arousal, psychophysiology

Charity has a significant impact on socio-economic processes and has increasingly become the subject of neuroeconomic research over the recent years. One of the important topics is the influence of emotions on decision-making about donations since the use of emotional appeals is one of the most widely used methods of drawing to donation behavior. This method is also widely used in social advertising, especially with the use of negative and shocking messages [1; 2]. Negative emotions are more likely to induce prosocial behavior than positive or neutral ones [3]; however, in some cases, they can cause distraction from the advertising message [4] and trigger a defensive reaction of the target audience [5]. At the same time, according to some reports, positive emotions can be more effective than negative ones for collecting donations [6]. Also it

is important to note that, in addition to valence, prosocial behavior can be influenced by arousal caused by advertising messages [7]. Nevertheless, at the moment, this relationship has not been studied enough.

The aim of this study was to examine the relationship between the emotional state of contributors and their donation size to pet charities. We hypothesized that the size of donations may vary depending on valence and arousal of pictures, as well as on the characteristics of the dogs. Valence and arousal were measured with self-report 9-point scales. Also physiological measures including corrugator and zygomatic electromyography (EMG), heart rate, skin conductance response (SCR) were used to assess the emotional state of participants. Four characteristics of dogs which could be significant for donations were selected after consultation with experts from nonprofit organizations: health status, presence of a home, age, presence of a human nearby. Fifty-four healthy participants took part in the experiment. In the first part, participants were presented with 32 pictures of dogs and were asked to donate for each picture (0 to 10 rubles). Then participants revised the pictures and rated their valence and arousal.

A negative correlation between the size of a donation and valence was shown by Pearson correlation analysis ($r(54) = -.811$, $p < .001$). Arousal and donation also showed a significant correlation ($r(54) = .477$, $p = .006$). These correlations mean that the more unpleasant and intense emotions the participants experienced, the more they donated. We also found a positive correlation between the corrugator EMG and the size of donation ($r(54) = .695$, $p < .001$). Thus, the more the participants frowned (activity of the corrugator supercilii), the larger a donation was. Among the characteristics of dogs, a significant effect on the size of donation was shown only by the health status of dogs in a picture (healthy vs. sick) ($F(1,16) = 188,92$, $p < .0001$), healthy dogs evoked less donations than sick ones.

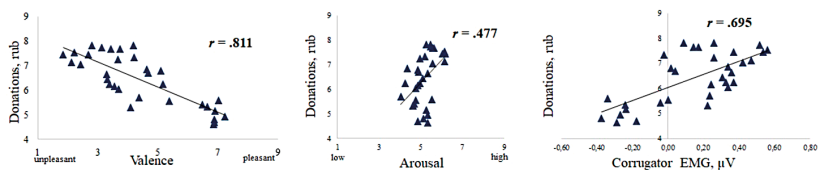


Fig. 1. Correlations between donations and affective measures

Therefore, valence was shown to be associated with donation size. This was supported by the self-report of emotions and physiological data. The relationship between arousal and donation size was supported only by the self-report of emotions. Sickness is the most significant characteristic for collecting donations in the context of homeless pets.

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